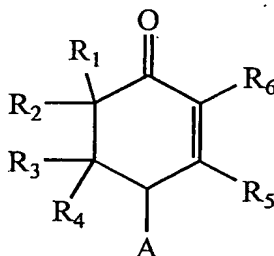


CLAIMS

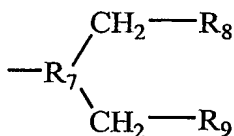
1. An inhibitory or blocking agent of molecular generating and/or inducing functions represented by the formula 1-a:



5 (wherein

(i) R₁, R₂, R₃, R₄, R₅ and R₆ represent independently hydrogen atom; halogen atom; C₁-C₆ alkyl group; amidino group; C₃-C₈ cycloalkyl group; C₁-C₆ alkoxy C₁-C₆ alkyl group; aryl group; allyl group; aralkyl group in which one or
10 more C₁-C₆ alkyl groups are bound to an aromatic ring selected from the group consisting of benzene, naphthalene and anthracene ring; C₁-C₆ alkylene group; benzoyl group; cinnamyl group; cinnamoyl group or furoyl group;

(ii) A represents hydrogen atom or



15

(wherein .

R₇ represents C₁-C₆ alkyl group; sulfide group or phosphate group;

R₈ and R₉ represent independently hydrogen atom; halogen atom; straight or branched C₁-C₆ alkyl group; aryl group;
20 allyl group; aralkyl group in which one or more C₁-C₆ alkyl

groups are bound to an aromatic ring selected from the group consisting of benzene, naphthalene and anthracene ring; C1-C6 alkylene group; benzoyl group; cinnamyl group; cinnamoyl group or furoyl group;

5 (iii) one or more of R1, R2, R3 and R4, and/or one or more of R5 and R6 may be substituted or non-substituted cyclopentyl group; substituted or non-substituted cyclohexyl group; or substituted or non-substituted naphthyl group;

(iv) R5 and R6 may form a ring by binding with another
10 condensation polycyclic hydrocarbon compound or heterocyclic compound;

(v) one or more of R3, R4, R5 and R6 may be substituted by one or more of substituents selected from the group consisting of halogen atom, cyano group, protected or non-protected carboxyl group, protected or non-protected hydroxyl
15 group, protected or non-protected amino group, C1-C6 alkyl group, C1-C6 alkoxy group, C1-C7 alkoxy carbonyl group, aryl group, C3-C6 cycloalkyl group, C1-C6 acylamino group, C1-C6 acyloxy group, C2-C6 alkenyl group, C1-C6 trihalogenoalkyl group, C1-C6 alkylamino group, and C1-C6 dialkylamino group;

20 (vi) R2 and/or R5 may be substituted by one or more substituents selected from the group consisting of halogen atom, C1-C6 alkyl group, protected or non-protected carboxyl group, protected or non-protected hydroxyl group, protected
25 or non-protected amino group, protected or non-protected C1-C6 alkylamino group, protected or non-protected C1-C6 aminoalkyl group, protected or non-protected C1-C6 alkylamino

C1-C6 alkyl group, protected or non-protected hydroxyalkyl group, and C3-C6 cycloalkylamino group;

(vii) when one or more of R3, R4, R5 and R6 are alkyl groups, terminal end(s) of the alkyl group(s) may be substituted by C3-C8 cycloalkyl group).

2. The inhibitory or blocking agent of molecular generating and/or inducing functions according to claim 1, wherein

said aryl group in (i), (ii) and (v) is phenyl, tolyl, xylyl or naphthyl group;

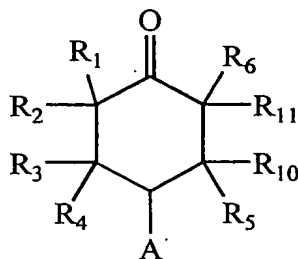
said substituted cyclopentyl group in (iii) is cyclopentylamino group or cyclopentylcarbinol group, said substituted cyclohexyl group in (iii) is cyclohexylamino group, cyclohexylaldehyde group or cyclohexyl acetic acid group, and said substituted naphthyl group in (iii) is

naphthylamino group or naphthylamino sulfonic acid group; and

said condensation polycyclic hydrocarbon compound in (iv) is pentalene, indene, naphthalene, azulene, heptalene, biphenylene, indacene, acenaphthylene, fluorene, phenalene, phenanthrene, anthracene, pentacene, hexacene,

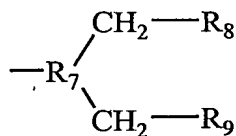
dibenzophenanthrene, 1H-cyclopentacyclooctene or benzocyclooctene, and said heterocyclic compound is furan, thiophene, pyrrole, γ -pyran, γ -thiopyran, pyridine, thiazole, imidazole pyrimidine, indole or quinoline.

3. An inhibitory or blocking agent of molecular generating and/or inducing functions represented by the formula 1-b:



(wherein

- (i) R1, R2, R3, R4, R5, R6, R10 and R11 represent
independently hydrogen atom; halogen atom; C1-C6 alkyl group;
5 amidino group; C3-C8 cycloalkyl group; C1-C6 alkoxy C1-C6
alkyl group; aryl group; allyl group; aralkyl group in which
one or more C1-C6 alkyl groups are bound to an aromatic ring
selected from the group consisting of benzene, naphthalene
and anthracene ring; C1-C6 alkylene group; benzoyl group;
10 cinnamyl group; cinnamoyl group or furoyl group;
(ii) A represents hydrogen atom or



(wherein

- R7 represents C1-C6 alkyl group; sulfide group or
15 phosphate group;

- R8 and R9 represent independently hydrogen atom; halogen
atom; straight or branched C1-C6 alkyl group; aryl group;
allyl group; aralkyl group in which one or more C1-C6 alkyl
groups are bound to an aromatic ring selected from the group
20 consisting of benzene, naphthalene and anthracene ring; C1-C6
alkylene group; benzoyl group; cinnamyl group; cinnamoyl

group or furoyl group;

(iii) one or more of R1, R2, R3 and R4, and/or one or more of R5, R6, R10 and R11 may be substituted or non-substituted cyclopentyl group; substituted or non-substituted cyclohexyl group; or substituted or non-substituted naphthyl group;

(iv) R5, R6, R10 and R11 may form a ring by binding with another condensation polycyclic hydrocarbon compound or heterocyclic compound;

(v) one or more of R3, R4, R5, R6, R10 and R11 may be substituted by one or more of substituents selected from the group consisting of halogen atom, cyano group, protected or non-protected carboxyl group, protected or non-protected hydroxyl group, protected or non-protected amino group, C1-C6 alkyl group, C1-C6 alkoxy group, C1-C7 alkoxy carbonyl group, aryl group, C3-C6 cycloalkyl group, C1-C6 acylamino group, C1-C6 acyloxy group, C2-C6 alkenyl group, C1-C6 trihalogenoalkyl group, C1-C6 alkylamino group, and C1-C6 dialkylamino group;

(vi) R2 and/or R5 may be substituted by one or more substituents selected from the group consisting of halogen atom, C1-C6 alkyl group, protected or non-protected carboxyl group, protected or non-protected hydroxyl group, protected or non-protected amino group, protected or non-protected C1-C6 alkylamino group, protected or non-protected C1-C6 aminoalkyl group, protected or non-protected C1-C6 alkylamino C1-C6 alkyl group, protected or non-protected hydroxyalkyl group, and C3-C6 cycloalkylamino group;

(vii) when one or more of R3, R4, R5, R6, R10 and R11 are alkyl groups, terminal end(s) of the alkyl group(s) may be substituted by C3-C8 cycloalkyl group).

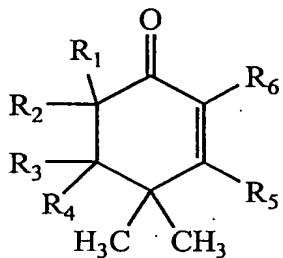
4. The inhibitory or blocking agent of molecular generating and/or inducing functions according to claim 3, wherein

said aryl group in (i), (ii) and (v) is phenyl, tolyl, xylyl or naphthyl group;

said substituted cyclopentyl group in (iii) is cyclopentylamino group or cyclopentylcarbinol group, said substituted cyclohexyl group in (iii) is cyclohexylamino group, cyclohexylaldehyde group or cyclohexyl acetic acid group, and said substituted naphthyl group in (iii) is naphthylamino sulfonic acid group; and

said condensation polycyclic hydrocarbon compound in (iv) is pentalene, indene, naphthalene, azulene, heptalene, biphenylene, indacene, acenaphthylene, fluorene, phenalene, phenanthrene, anthracene, pentacene, hexacene, dibenzophenanthrene, 1H-cyclopentacyclooctene or benzocyclooctene, and said heterocyclic compound is furan, thiophene, pyrrole, γ -pyran, γ -thiopyran, pyridine, thiazole, imidazole pyrimidine, indole or quinoline.

5. An inhibitory or blocking agent of molecular generating and/or inducing functions represented by the formula 2:



(wherein

- (i) R1, R2, R3, R4, R5 and R6 represent independently hydrogen atom; halogen atom; C1-C6 alkyl group; amidino group; C3-C8 cycloalkyl group; C1-C6 alkoxy C1-C6 alkyl group; aryl group; allyl group; aralkyl group in which one or more C1-C6 alkyl groups are bound to an aromatic ring selected from the group consisting of benzene, naphthalene and anthracene ring; C1-C6 alkylene group; benzoyl group; cinnamyl group; cinnamoyl group or furoyl group;
- (ii) one or more of R1, R2, R3 and R4, and/or one or more of R5 and R6 may be substituted or non-substituted cyclopentyl group; substituted or non-substituted cyclohexyl group; or substituted or non-substituted naphthyl group;
- (iii) R5 and R6 may form a ring by binding with another condensation polycyclic hydrocarbon compound or heterocyclic compound;
- (iv) one or more of R3, R4, R5 and R6 may be substituted by one or more of substituents selected from the group consisting of halogen atom, cyano group, protected or non-protected carboxyl group, protected or non-protected hydroxyl group, protected or non-protected amino group, C1-C6 alkyl group, C1-C6 alkoxy group, C1-C7 alkoxy carbonyl group, aryl.

group, C3-C6 cycloalkyl group, C1-C6 acylamino group, C1-C6 acyloxy group, C2-C6 alkenyl group, C1-C6 trihalogenoalkyl group, C1-C6 alkylamino group, and C1-C6 dialkylamino group; (v). R2 and/or R5 may be substituted by one or more

5 substituents selected from the group consisting of halogen atom, C1-C6 alkyl group, protected or non-protected carboxyl group, protected or non-protected hydroxyl group, protected or non-protected amino group, protected or non-protected C1-C6 alkylamino group, protected or non-protected C1-C6 aminoalkyl group, protected or non-protected C1-C6 alkylamino C1-C6 alkyl group, protected or non-protected hydroxyalkyl group, and C3-C6 cycloalkylamino group;

10 (vi) when one or more of R3, R4, R5 and R6 are alkyl groups, terminal end(s) of the alkyl group(s) may be substituted by C3-C8 cycloalkyl group).

6. The inhibitory or blocking agent of molecular generating and/or inducing functions according to claim 5, wherein

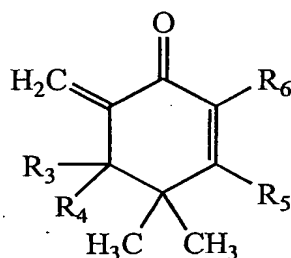
said aryl group in (i) and (iv) is phenyl, tolyl, xylyl or naphthyl group;

20 said substituted cyclopentyl group in (ii) is cyclopentylamino group or cyclopentylcarbinol group, said substituted cyclohexyl group in (ii) is cyclohexylamino group, cyclohexylaldehyde group or cyclohexyl acetic acid group, and said substituted naphthyl group in (ii) is 25 naphthylamino group or naphthylamino sulfonic acid group; and

said condensation polycyclic hydrocarbon compound in (iii) is pentalene, indene, naphthalene, azulene, heptalene,

biphenylene, indacene, acenaphthylene, fluorene, phenalene, phenanthrene, anthracene, pentacene, hexacene, dibenzophenanthrene, 1H-cyclopentacyclooctene or benzocyclooctene, and said heterocyclic compound is furan, thiophene, pyrrole, γ -pyran, γ -thiopyran, pyridine, thiazole, imidazole pyrimidine, indole or quinoline.

7. An inhibitory or blocking agent of molecular generating and/or inducing functions represented by the formula 3-a:



10 (wherein

(i) R3, R4, R5 and R6 represent independently hydrogen atom; halogen atom; C1-C6 alkyl group; amidino group; C3-C8 cycloalkyl group; C1-C6 alkoxy C1-C6 alkyl group; aryl group; allyl group; aralkyl group in which one or more C1-C6 alkyl groups are bound to an aromatic ring selected from the group consisting of benzene, naphthalene and anthracene ring; C1-C6 alkylene group; benzoyl group; cinnamyl group; cinnamoyl group or furoyl group;

(ii) one or more of R3 and R4, and/or one or more of R5 and R6 may be substituted or non-substituted cyclopentyl group; substituted or non-substituted cyclohexyl group; or substituted or non-substituted naphthyl group;

(iii) R5 and R6 may form a ring by binding with another

condensation polycyclic hydrocarbon compound or heterocyclic compound;

(iv) one or more of R3, R4, R5 and R6 may be substituted by one or more of substituents selected from the group

5 consisting of halogen atom, cyano group, protected or non-protected carboxyl group, protected or non-protected hydroxyl group, protected or non-protected amino group, C1-C6 alkyl group, C1-C6 alkoxy group, C1-C7 alkoxy carbonyl group, aryl group, C3-C6 cycloalkyl group, C1-C6 acylamino group, C1-C6
10 acyloxy group, C2-C6 alkenyl group, C1-C6 trihalogenoalkyl group, C1-C6 alkylamino group, and C1-C6 dialkylamino group;

(v) R5 may be substituted by one or more substituents

selected from the group consisting of halogen atom, C1-C6 alkyl group, protected or non-protected carboxyl group,

15 protected or non-protected hydroxyl group, protected or non-protected amino group, protected or non-protected C1-C6 alkylamino group, protected or non-protected C1-C6 aminoalkyl group, protected or non-protected C1-C6 alkylamino C1-C6 alkyl group, protected or non-protected hydroxyalkyl group,
20 and C3-C6 cycloalkylamino group;

(vi) when one or more of R3, R4, R5 and R6 are alkyl groups, terminal end(s) of the alkyl group(s) may be substituted by C3-C8 cycloalkyl group).

8. The inhibitory or blocking agent of molecular generating
25 and/or inducing functions according to claim 7, wherein

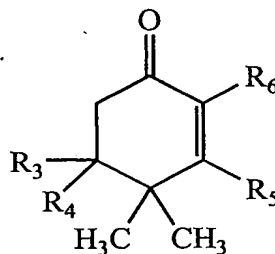
said aryl group in (i) and (iv) is phenyl, tolyl, xylyl or naphthyl group;

said substituted cyclopentyl group in (ii) is cyclopentylamino group or cyclopentylcarbinol group, said substituted cyclohexyl group in (ii) is cyclohexylamino group, cyclohexylaldehyde group or cyclohexyl acetic acid group, and said substituted naphthyl group in (ii) is naphthylamino group or naphthylamino sulfonic acid group; and

said condensation polycyclic hydrocarbon compound in (iii) is pentalene, indene, naphthalene, azulene, heptalene, biphenylene, indacene, acenaphthylene, fluorene, phenalene, phenanthrene, anthracene, pentacene, hexacene, dibenzophenanthrene, 1H-cyclopentacyclooctene or benzocyclooctene, and said heterocyclic compound is furan, thiophene, pyrrole, γ -pyran, γ -thiopyran, pyridine, thiazole, imidazole pyrimidine, indole or quinoline.

9. The inhibitory or blocking agent of molecular generating and/or inducing functions according to claim 7, wherein R3, R4, R5 and R6 represent hydrogen atoms.

10. An inhibitory or blocking agent of molecular generating and/or inducing functions represented by the formula 3-b:



(wherein

(i) R3, R4, R5 and R6 represent independently hydrogen atom; halogen atom; C1-C6 alkyl group; amidino group; C3-C8

cycloalkyl group; C1-C6 alkoxy C1-C6 alkyl group; aryl group; allyl group; aralkyl group in which one or more C1-C6 alkyl groups are bound to an aromatic ring selected from the group consisting of benzene, naphthalene and anthracene ring; C1-C6 alkylene group; benzoyl group; cinnamyl group; cinnamoyl group or furoyl group;

(ii) one or more of R3 and R4, and/or one or more of R5 and R6 may be substituted or non-substituted cyclopentyl group; substituted or non-substituted cyclohexyl group; or substituted or non-substituted naphthyl group;

(iii) R5 and R6 may form a ring by binding with another condensation polycyclic hydrocarbon compound or heterocyclic compound;

(iv) one or more of R3, R4, R5 and R6 may be substituted by one or more of substituents selected from the group consisting of halogen atom, cyano group, protected or non-protected carboxyl group, protected or non-protected hydroxyl group, protected or non-protected amino group, C1-C6 alkyl group, C1-C6 alkoxy group, C1-C7 alkoxy carbonyl group, aryl group, C3-C6 cycloalkyl group, C1-C6 acylamino group, C1-C6 acyloxy group, C2-C6 alkenyl group, C1-C6 trihalogenoalkyl group, C1-C6 alkylamino group, and C1-C6 dialkylamino group;

(v) R5 may be substituted by one or more substituents selected from the group consisting of halogen atom, C1-C6 alkyl group, protected or non-protected carboxyl group, protected or non-protected hydroxyl group, protected or non-protected amino group, protected or non-protected C1-C6

alkylamino group, protected or non-protected C1-C6 aminoalkyl group, protected or non-protected C1-C6 alkylamino C1-C6 alkyl group, protected or non-protected hydroxyalkyl group, and C3-C6 cycloalkylamino group;

5 (vi) when one or more of R3, R4, R5 and R6 are alkyl groups, terminal end(s) of the alkyl group(s) may be substituted by C3-C8 cycloalkyl group).

11. The inhibitory or blocking agent of molecular generating and/or inducing functions according to claim 10, wherein

10 said aryl group in (i) and (iv) is phenyl, tolyl, xylyl or naphthyl group;

said substituted cyclopentyl group in (ii) is cyclopentylamino group or cyclopentylcarbinol group, said substituted cyclohexyl group in (ii) is cyclohexylamino group, cyclohexylaldehyde group or cyclohexyl acetic acid group, and said substituted naphthyl group in (ii) is naphthylamino group or naphthylamino sulfonic acid group; and

said condensation polycyclic hydrocarbon compound in (iii) is pentalene, indene, naphthalene, azulene, heptalene, 20 biphenylene, indacene, acenaphthylene, fluorene, phenalene, phenanthrene, anthracene, pentacene, hexacene, dibenzophenanthrene, 1H-cyclopentacyclooctene or benzocyclooctene, and said heterocyclic compound is furan, thiophene, pyrrole, γ -pyran, γ -thiopyran, pyridine, thiazole, 25 imidazole pyrimidine, indole or quinoline.

12. The inhibitory or blocking agent of molecular generating and/or inducing functions according to any one of claims 1 to

11, which is an antibacterial agent.

13. The inhibitory or blocking agent of molecular generating and/or inducing functions according to any one of claims 1 to 11, which is an antifungal agent.

5 14. The inhibitory or blocking agent of molecular generating and/or inducing functions according to any one of claims 1 to 11, which is an antiviral agent.

15. The inhibitory or blocking agent of molecular generating and/or inducing functions according to any one of claims 1 to 10 11, which is a bactericidal and/or sterilizing agent.

16. The inhibitory or blocking agent of molecular generating and/or inducing functions according to any one of claims 1 to 11, which is an anticancer agent and/or antitumor agent.

17. The inhibitory or blocking agent of molecular generating and/or inducing functions according to any one of claims 1 to 15 11, which is an anticoagulant and/or antifibrinolytic agent.

18. The inhibitory or blocking agent of molecular generating and/or inducing functions according to any one of claims 1 to 11, which is an inhibitory and/or blocking agent of antigen- 20 antibody reaction.

19. The inhibitory or blocking agent of molecular generating and/or inducing functions according to any one of claims 1 to 11, which is an organ and tissue preservative.

20. The inhibitory or blocking agent of molecular generating and/or inducing functions according to any one of claims 1 to 25 11, which is an antiseptic and/or preservative.

21. The inhibitory or blocking agent of molecular generating

and/or inducing functions according to any one of claims 1 to 11, which is a labeled reagent that has a labeled substance in at least one substituent, which labeled substance indicates a targeted position of generating function of molecule.

22. The inhibitory or blocking agent of molecular generating and/or inducing functions according to any one of claims 1 to 11, which is a reductant.

23. The inhibitory or blocking agent of molecular generating and/or inducing functions according to any one of claims 1 to 11, which is a free radical scavenger.

24. The inhibitory or blocking agent of molecular generating and/or inducing functions according to any one of claims 1 to 11, which is a desulfurization agent.

25. The inhibitory or blocking agent of molecular generating and/or inducing functions according to any one of claims 1 to 11, which is a depolymerization agent.

26. The inhibitory or blocking agent of molecular generating and/or inducing functions according to any one of claims 1 to 11, which is an agent for improving functional and/or physical properties of surfactants.

27. The inhibitory or blocking agent of molecular generating and/or inducing functions according to any one of claims 1 to 11, which is a spermatocidal agent or contraceptive agent for external use.

28. The inhibitory or blocking agent of molecular generating and/or inducing functions according to any one of claims 1 to

11, which is a thrombolytic agent.

29. The inhibitory or blocking agent of molecular generating and/or inducing functions according to any one of claims 1 to 11, which is a conformation altering agent of saccharide chains.

30. The inhibitory or blocking agent of molecular generating and/or inducing functions according to any one of claims 1 to 11, which is an agent for preventing arteriosclerosis.

31. The inhibitory or blocking agent of molecular generating and/or inducing functions according to any one of claims 1 to 11, which is a metabolism (lipids, sugars, proteins)-improving agent.

32. The inhibitory or blocking agent of molecular generating and/or inducing functions according to any one of claims 1 to 11, which is a promoting agent for wound healing or an epithelialization-promoting agent (including hair restoration effect).

33. The inhibitory or blocking agent of molecular generating and/or inducing functions according to any one of claims 1 to 11, which is a phase transition agent or a phase transition-improving agent.

34. The inhibitory or blocking agent of molecular generating and/or inducing functions according to any one of claims 1 to 11, which is an improving agent of microphase separation structure.

35. The inhibitory or blocking agent of molecular generating and/or inducing functions according to any one of claims 1 to

11, which is a plasticizer or plasticity and/or elasticity-improving agent.

36. The inhibitory or blocking agent of molecular generating and/or inducing functions according to any one of claims 1 to 11, which is a copolymerization agent or a copolymerization-improving agent.

37. The inhibitory or blocking agent of molecular generating and/or inducing functions according to any one of claims 1 to 11, which is a polymerization regulator or an improving agent of polymerization adjustment.

38. The inhibitory or blocking agent of molecular generating and/or inducing functions according to any one of claims 1 to 11, which is a stabilizer or a stabilization-improving agent.

39. The inhibitory or blocking agent of molecular generating and/or inducing functions according to any one of claims 1 to 11, which is an antioxidant or an oxidation-preventing agent.

40. The inhibitory or blocking agent of molecular generating and/or inducing functions according to any one of claims 1 to 11, which is an improving agent of crystallized materials and/or amorphous materials.

41. The inhibitory or blocking agent of molecular generating and/or inducing functions according to any one of claims 1 to 11, which is a fluidability-improving agent.

42. The inhibitory or blocking agent of molecular generating and/or inducing functions according to any one of claims 1 to 11, which is a softener or an improving agent of softeners and/or flexibility improving agent.

43. The inhibitory or blocking agent of molecular generating and/or inducing functions according to any one of claims 1 to 11, which is a modulation and/or improving agent of fluorescent wavelength and/or excitation wavelength of pigments, coating materials, paints or colorants.

44. The inhibitory or blocking agent of molecular generating and/or inducing functions according to any one of claims 1 to 11, which is an improving agent of functional and/or physical properties of low molecular substances.

45. The inhibitory or blocking agent of molecular generating and/or inducing functions according to any one of claims 1 to 11, which is an improving agent of physical properties and functions of macromolecular substances.

46. The inhibitory or blocking agent of molecular generating and/or inducing functions according to any one of claims 1 to 11, which is a physical property-improving agent of macromolecular composite materials and functional macromolecular composite materials.